

COLOR QUANTIZATION AND SIMILARITY MEASURE FOR CONTENT BASED IMAGE RETRIEVAL

Abstract of the Disclosure

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The invention determines the degree of similarity between a target image and each of a plurality of reference images. The measure used for the degree of similarity between images is based on the human perceptive system, so that images that appear to a human to be similar in color have a higher similarity measure than images that appear to a human to be dissimilar in color. Each of the most populous colors of each partition of the target image is associated with a color in a corresponding partition of the reference image that is closest to the target image color. The similarity measure is based on the number of occurrences of each of these associated colors in the corresponding partitions, as well as the color difference between these associated colors. Thus, images that have similar, albeit not identical, colors, will have a higher similarity measure than images that have dissimilar colors. In a preferred embodiment, color difference is determined based upon the CIE luminance-chrominance color space. Also, in a preferred embodiment, the target image color is quantized into a set of discrete colors that are based upon the predominant colors in the reference images.